CLAIMS

1. A burst signal extinction ratio control circuit for supplying a control signal to a driving section for performing driving by supplying a laser diode with a bias current and a modulation current, comprising:

a measurement means for measuring average optical power for each burst of the laser diode;

a modulation current control means for controlling a modulation current Im of the laser diode based on the average optical power measured by the measurement means; and

a bias current control means for controlling a bias current Ib of the laser diode based on the average optical power measured by the measurement means.

2. The burst signal extinction ratio control circuit according to claim 1, wherein the modulation current control means has a function having a means for increasing the modulation current Im by a specified value ΔIm.

3. The burst signal extinction ratio control circuit according to claim 2, wherein the specified value ΔIm is proportional to the modulation current Im.

4. The burst signal extinction ratio control circuit

according to claim 1, wherein the modulation current control means comprises:

a means for detecting a difference between average optical power P1 of burst #1 when the modulation current is Im and average optical power P2 of burst #2 when the modulation current is Im+ΔIm; and

a means for decreasing the modulation current when a value of the difference is larger than a previously specified reference value ΔPref, and on the contrary, for increasing the modulation current when the value of the difference is smaller than the reference value ΔPref.

5. The burst signal extinction ratio control circuit according to claim 4, wherein an increasing or decreasing amount of the modulation current is set to a previously specified constant value A.

6. The burst signal extinction ratio control circuit according to claim 1, wherein the bias current control means comprises:

a means for comparing average optical power P3 of burst #3 when the bias current is Ib with a previously specified reference value Pref; and

a means for decreasing the bias current when the average optical power P3 is larger than the reference value

Pref, and for increasing the bias current when the average optical power P3 is smaller than the reference value Pref based on the comparison.

7. The burst signal extinction ratio control circuit according to claim 6, wherein an increasing or decreasing amount of the bias current is set to a previously specified constant value B.

8. A burst signal extinction ratio control method for supplying a control signal to a driving section for performing driving by supplying a laser diode with a bias current and a modulation current, comprising:

a measurement step for measuring average optical power for each burst of the laser diode;

a modulation current control step for controlling a modulation current Im of the laser diode based on the average optical power measured by the measurement step; and

a bias current control step for controlling a bias current Ib of the laser diode based on the average optical power measured by the measurement step.

9. The burst signal extinction ratio control method according to claim 8, comprising:

a modulation current control step comprising: a step

for detecting a difference between average optical power P1 of burst #1 when the modulation current is Im and average optical power P2 of burst #2 when the modulation current is Im+ΔIm; and a step for decreasing the modulation current when a value of the difference is larger than a previously specified reference value ΔPref, and on the contrary, for increasing the modulation current when the value of the difference is smaller than the reference value ΔPref; and

a bias current control step comprising: a step for comparing average optical power P3 of burst #3 when the bias current is Ib with a previously specified reference value Pref; and a step for decreasing the bias current when the average optical power P3 is larger than the reference value Pref, and for increasing the bias current when the average optical power P3 is smaller than the reference value Pref based on the comparison, and further comprising:

a step for alternately executing the modulation current control step and the bias current control step.

10. A computer program for making a computer execute a burst signal extinction ratio control method for supplying a control signal to a driving section for performing driving by supplying a laser diode with a bias current and a modulation current, comprising:

a measurement step for measuring average optical power

for each burst of the laser diode;

a modulation current control step for controlling a modulation current Im of the laser diode based on the average optical power measured by the measurement step; and

a bias current control step for controlling a bias current Ib of the laser diode based on the average optical power measured by the measurement step.

11. The computer program according to claim 10, comprising:

a modulation current control step comprising: a step for detecting a difference between average optical power P1 of burst #1 when the modulation current is Im and average optical power P2 of burst #2 when the modulation current is Im+ΔIm; and a step for decreasing the modulation current when a value of the difference is larger than a previously specified reference value ΔPref, and on the contrary, for increasing the modulation current when the value of the difference is smaller than the reference value ΔPref; and

a bias current control step comprising: a step for comparing average optical power P3 of burst #3 when the bias current is Ib with a previously specified reference value Pref; and a step for decreasing the bias current when the average optical power P3 is larger than the reference value Pref, and for increasing the bias current when the average

optical power P3 is smaller than the reference value Pref based on the comparison, and further comprising:

a step for alternately executing the modulation current control step and the bias current control step.

12. A laser diode drive circuit, comprising:

a bias current source for supplying a laser diode with a bias current;

a modulation current source for supplying the laser diode with a modulation current;

a measurement means for measuring average optical power for each burst of the laser diode;

a modulation current control means for controlling a modulation current Im of the laser diode based on the average optical power measured by the measurement means; and

a bias current control means for controlling a bias current Ib of the laser diode based on the average optical power measured by the measurement means, wherein

the average optical power and an extinction ratio of the laser diode become constant.

13. An integrated circuit mounting a burst signal extinction ratio control circuit for supplying a control signal to a driving section for performing driving by supplying a laser diode with a bias current and a modulation

current, comprising:

a measurement means for measuring average optical power for each burst of the laser diode;

a modulation current control means for controlling a modulation current Im of the laser diode based on the average optical power measured by the measurement means; and

a bias current control means for controlling a bias current Ib of the laser diode based on the average optical power measured by the measurement means.